



RESEARCH CORPORATION

557 POST ROAD • DARIEN, CONNECTICUT 06820 • PHONE (203) 655-3991

July 20, 1965

Mr. T. Nelson
Box 1546

Dear Mr. Nelson:

Here is a new data/price sheet on fixed path length infrared cells precision crafted by Limit. Scientists here and abroad find these stainless steel cells invaluable for investigating almost all types of liquids and solutions.

You can select either demountable or sealed types with the window material and path length best suited to your studies.

Same day delivery can be made of cells with NaCl or KBr optics in most path lengths.

Nominally matched pairs can be supplied at no extra charge. Supplemental spacers in various thicknesses augment the usefulness of these quality cells.

Please write or phone if you have any questions about these or any of our wide range of spectroscopy accessories. You'll enjoy using them to facilitate your experiments and projects.

Cordially yours,

A handwritten signature in dark ink, appearing to read "Alice Drew Redmont".

Alice Drew Redmont
Marketing Manager

ADR:ms

Enclosure

These small cells are invaluable for use when the amount of sample is limited. The Micronujol Cells employ windows which are small enough to be made from any scrap windows on hand. They are available to fit Perkin-Elmer 21 and 221 and Infracord spectrophotometers. These Micronujol Cells can also be used as mounts for the new TAC-1 Throwaway Cells.



Micronujol Cells

		Price F.O.B. Darien
MN-04	Micronujol cell without windows for Infracord	40.00
MN-05	Micronujol cell without windows for Perkin-Elmer 21 series	40.00

Windows for Micronujol Cells

MN-5N	NaCl windows for micronujol cells MN-04 and MN-05, one pair	12.00
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Microcells

M-04N	Microcell with NaCl windows for Infracord only. Specify path length: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.150, 0.175, 0.2, 0.5 or 1.0 mm. Supplied complete with Luer lock syringe holder, flushing tube and syringe needle	70.00
M-04K	Microcell with KBr windows for Infracord only. Specify path length: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5 or 1.0 mm. Supplied complete with Luer lock syringe holder, flushing tube and syringe needle	75.00
M-05N	Microcell with NaCl windows for PE 21 series. Specify path length: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.150, 0.175, 0.2, 0.5 or 1.0 mm. Supplied complete with Luer lock syringe holder, flushing tube and syringe needle	75.00
M-05K	Microcell with KBr windows for PE 21 series. Specify path length: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.2, 0.5 or 1.0 mm. Supplied complete with Luer lock syringe holder, flushing tube and syringe needle	80.00

Microcell Windows

M-4N	NaCl windows for M-04N, one pair*	24.00
M-4K	KBr windows for M-04K, one pair*	26.00
M-5N	NaCl windows for M-05N, one pair*	22.00
M-5K	KBr windows for M-05K, one pair*	24.00

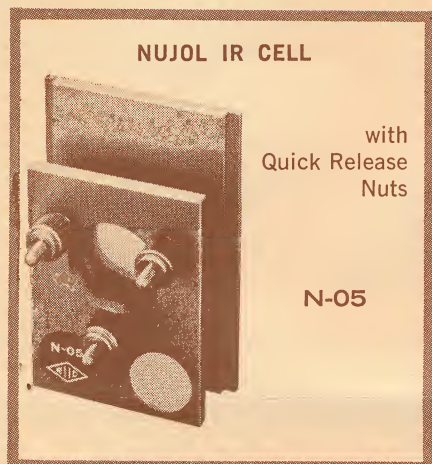
*A pair consists of one drilled and one undrilled window.

LIMIT Microcells have proved to be the most efficient of all standard microcells yet devised. Filling operation is carried out by means of a syringe needle, supplied with the cell, and the filling ports are closed with special stainless steel plugs and Teflon seals. These plugs not only act as a perfect seal but also as a vent during the filling operation. The cell is also supplied with a Luer lock syringe holder and a flushing tube. Sample recovery and cell flushing are carried out by screwing these into the filling ports.

Microcells are supplied assembled with amalgamated spacers of any specified thickness in the range of 0.007 to 1 mm. Teflon spacers and gaskets for Microcells can be supplied to order. Windows ordinarily supplied are NaCl and KBr, but other windows can be made to order. Microcells are currently available to fit the following spectrophotometers, with cell volume at 0.1 mm path length given in brackets: Infracord (0.006 ml) and Perkin Elmer 21 and 221 (0.002 ml).

DEMOUNTABLE

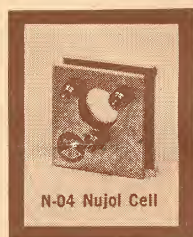
NUJOL CELLS



N-05

These cells are used as nujol mull holders or as demountable cells with viscous or non-volatile liquids. Nujol cells have special quick-release nuts for speedy and easy dismantling and re-assembly. Windows kept in stock are NaCl, KBr, fused silica, CaF_2 , CsBr, CsI and KRS-5, but other windows may be supplied on special order.

These cells are supplied to fit Perkin-Elmer 21 and 221, Infracord 137, Beckman IR-4, IR-5, IR-7 and Cary White-90 spectrophotometers.



N-04

**Demountable Cell
for Infracord**

THE BASIC TOOLS FOR IR ANALYSIS



Box 852, Darien, Conn.
Telephone (203) 655-3991

Nujol Cells

Part No. Description

- N-04 Nujol cell with one packet of assorted spacers (N-1SA) and two neoprene gaskets but without windows, to fit Infracord only
- N-05 Nujol cell with one pack of assorted spacers (N-1SA) and two neoprene gaskets but without windows, to fit PE 21 series, Beckman IR-4, 5, 7, and 9 and Unicam SP-200

Windows for N-04 and N-05 Nujol Cells

- N-1N NaCl windows for N-04 and N-05 cells, one pair
- N-1K KBr windows for N-04 and N-05 cells, one pair
- N-1CF CaF_2 windows for N-04 and N-05 cells, one pair
- N-1BF BaF_2 windows for N-04 and N-05 cells, one pair
- N-1CI CsI windows for N-04 and N-05 cells, one pair
- N-1CB CsBr windows for N-04 and N-05 cells, one pair
- N-1TBI KRS-5 windows for N-04 and N-05 cells, one pair
- N-1IRT Irtran-2 windows for N-04 and N-05 cells, one pair

Spacers and Gaskets for N-04 and N-05

- N-1S7 Tin spacers, 0.007 mm thick, pack of 12
- N-1S12 Tin spacers, 0.012 mm thick, pack of 12
- N-1S18 Tin spacers, 0.018 mm thick, pack of 12
- N-1S50 Tin spacers, 0.05 mm thick, pack of 12
- N-1S75 Lead spacers, 0.075 mm thick, pack of 12 \$4.00
- N-1S100 Lead spacers, 0.10 mm thick, pack of 12 \$4.00
- N-1S125 Lead spacers, 0.125 mm thick, pack of 12 \$4.00
- N-1S150 Lead spacers, 0.15 mm thick, pack of 12
- N-1S175 Lead spacers, 0.175 mm thick, pack of 12
- N-1S200 Lead spacers, 0.20 mm thick, pack of 12 \$4.00
- N-1S500 Lead spacers, 0.5 mm thick, pack of 12
- N-1S1000 Lead spacers, 1.0 mm thick, pack of 12
- N-1SA Assorted tin and lead spacers, two each of the following thicknesses: 0.007, 0.012, 0.018, 0.025, 0.035, 0.075, 0.10, 0.125, 0.15, 0.175, 0.20, 0.5 and 1.0 mm
- N-1G Neoprene gaskets, pack of 12
- N-Q Quick release nuts for N-04 and N-05, set of three



Table Cells for Infrared

Sealed cell with NaCl windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 2 mm	53.00
Sealed cell with KBr windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 2 mm	62.00
Demountable cell with NaCl windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 2 mm	53.00
Demountable cell with KBr windows and two Teflon plugs for Infracord only. Specify path length from 0.007 — 2 mm	62.00



Demountable Cells

NaCl windows for all sealed and demountable cells, one pair*	115.00
BaF ₂ windows for all sealed and demountable cells, one pair*	155.00
CsI windows for all sealed and demountable cells, one pair*	200.00
AgCl windows for all sealed and demountable cells, one pair*	160.00
Ge windows for all sealed and demountable cells, one pair*	195.00
Ir windows for all sealed and demountable cells, one pair*	185.00

* Each pair consists of one drilled and one undrilled window

Accessories for All Sealed and Demountable Cells

Front lead gaskets for all sealed cells, pack of 12	4.00
Front Teflon gaskets for all demountable cells, pack of six	4.00
Rear neoprene gaskets for all sealed and demountable cells, pack of 12	3.00
Teflon plugs for all sealed and demountable cells, pack of six	3.00

Spacers for All Sealed IR Liquid Cells

F-S7	Tin spacers, 0.007 mm thick, pack of 12	4.00
F-S12	Tin spacers, 0.012 mm thick, pack of 12	4.00
F-S18	Tin spacers, 0.018 mm thick, pack of 12	4.00
F-S25	Lead spacers, 0.025 mm thick, pack of 12	4.00
F-S50	Lead spacers, 0.050 mm thick, pack of 12	4.00
F-S75	Lead spacers, 0.075 mm thick, pack of 12	4.00
F-S100	Lead spacers, 0.10 mm thick, pack of 12	4.00
F-S125	Lead spacers, 0.125 mm thick, pack of 12	4.00
F-S150	Lead spacers, 0.15 mm thick, pack of 12	4.00
F-S175	Lead spacers, 0.175 mm thick, pack of 12	4.00
F-S200	Lead spacers, 0.20 mm thick, pack of 12	4.00
F-S500	Lead spacers, 0.5 mm thick, pack of 12	4.00
F-S1000	Lead spacers, 1.0 mm thick, pack of 12	4.00
F-SA	Assorted tin and lead spacers, pack of two each of the following thicknesses: 0.007, 0.012, 0.018, 0.025, 0.05, 0.075, 0.10, 0.125, 0.15, 0.175, 0.20, 0.5 and 1.0 mm	8.00

Spacers for All Demountable IR Liquid Cells

F-T7	Teflon spacers, 0.007 mm thick, pack of six	4.00
F-T12	Teflon spacers, 0.012 mm thick, pack of six	4.00
F-T25	Teflon spacers, 0.025 mm thick, pack of six	4.00
F-T50	Teflon spacers, 0.050 mm thick, pack of six	4.00
F-T75	Teflon spacers, 0.075 mm thick, pack of six	4.00
F-T100	Teflon spacers, 0.10 mm thick, pack of six	4.00
F-T200	Teflon spacers, 0.2 mm thick, pack of three	3.00
F-T500	Teflon spacers, 0.5 mm thick, pack of three	3.00
F-T1000	Teflon spacers, 1.0 mm thick, pack of three	3.00
F-TA	Assorted Teflon spacers, pack of two each of the following thicknesses: 0.007, 0.013, 0.025, 0.05, 0.075, 0.10, 0.20, 0.5 and 1.0 mm	14.00

Used by leading scientists the world over

UMIT

RESEARCH CORPORATION

557 Post Road, Darien, Conn. (203) Oliver 5-3991

FIXED PATH LENGTH

F-05 SEALED INFRARED CELLS

The most commonly used for nearly all varieties of liquids and solutions, Limit Sealed Cells have an aperture of 25 x 10 mm and can be assembled to any specified path length from 0.007 mm to 1 mm.

These cells are supplied to fit Perkin-Elmer 21 and 221, Infracord 137, Beckman IR-4, IR-5, IR-7 and Cary White-90 spectrophotometers. Windows usually supplied are NaCl, KBr, fused silica, CaF_2 , CsBr, CsI and KRS-5, but other windows can be supplied on special order. Spacers used are amalgamated lead and tin.

F-05T DEMOUNTABLE CELLS

Limit Demountable Cells are identical with Sealed Cells, except they have Teflon instead of amalgamated spacers. These cells are tight to volatile liquids and can also be used as sealed cells for most purposes. Teflon spacers are available from 0.007 mm to 1 mm.

F-05 Sealed Cell



Sealed IR Liquid Cells

F.O.B. Darien
Price

F-05N	Amalgamated sealed cell with NaCl windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	55.00
F-05K	Amalgamated sealed cell with KBr windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	65.00
F-05CF	Amalgamated sealed cell with CaF_2 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	140.00
F-05BF	Amalgamated sealed cell with BaF_2 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	180.00
F-05CI	Amalgamated sealed cell with CsI windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	225.00
F-05CB	Amalgamated sealed cell with CsBr windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	185.00
F-05TBI	Amalgamated sealed cell with KRS-5 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	220.00
F-05IR	Amalgamated sealed cell with Irtran-2 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	210.00

Note: All sealed cells are nominally matched at designated path length. However, accurately matched cells can be specially ordered at an additional charge of \$7.50 per pair.

Demountable IR Liquid Cells

F-05NT	Demountable cell with NaCl windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	55.00
F-05KT	Demountable cell with KBr windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	65.00
F-05CFT	Demountable cell with CaF_2 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	140.00
F-05BFT	Demountable cell with BaF_2 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	180.00
F-05CIT	Demountable cell with CsI windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	225.00
F-05CBT	Demountable cell with CsBr windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	185.00
F-05TBIT	Demountable cell with KRS-5 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	220.00
F-05IRT	Demountable cell with Irtran-2 windows and two Teflon plugs for PE 21 series, Infracord, Beckman IR-4, 5, 7, 8 and 9. Specify path length from 0.007 — 1 mm	210.00